REMARKS

This responds to the Office Action mailed on April 4, 2005. Reconsideration is respectfully requested. By this amendment, claims 1 – 6, 8 – 9, 11 – 17, 20 and 22 - 24 are amended, no claims are canceled, and no claims are added; as a result, claims 1 – 26 remain pending in this application.

Objection to the Drawings

The Examiner objected to the drawings due to non-compliance with 37 C.F.R. 1.121(d) as not being of sufficient quality. Formal Drawings are submitted concurrently with this response.

Objection to the Abstract

The Examiner objected to the Abstract of the disclosure because the Abstract did not commence on a separate sheet of paper in accordance with 37 C.F.R. 1.52(b)(4). The abstract is provided with the response on a separate sheet of paper in accordance with 37 C.F.R. 1.52(b)(4).

Objection to the Claims

The Examiner objected to claims 4-6, 9, 11-14, 17 and 23 due to informalities.

The Examiner objected to claim 5 under 37 C.F.R. 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 5 has been amended to clarify that the code generator generates the associated spreading codes for despreading each of the multi-rate channels.

Rejection of the Claims

Claims 1, 3, 4 and 17-19 were rejected under 35 USC § 102(b) as being anticipated by Nakayasu (U.S. 6,515,979). Claims 5, 6, 9-16, 20 and 22-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakayasu in further view of Narvinger et al. (U.S. 6,381,229).

Claims 2, 7, 8, 21 and 26 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakayasu in further view of Matti Latva-aho (IEEE Transactions on Vehicular Technology, Vol. 47, No. 4, pp. 1119-1133 (Nov. 1998)).

Applicants' claims 1 – 15 are directed to a spread spectrum receiver having parallel signal-processing paths. One path, referred to as the high-rate signal-processing path, despreads multi-rate channels. The second path, referred to as the low-rate signal-processing path, despreads fixed-rate channels. The spread spectrum signals of the multi-rate channels are despread with one of a plurality of despreading factors, while the spread-spectrum signals of the fixed rate channels are despread with a fixed despreading factor Applicant submits that none of the cited art teaches ***parallel signal-processing paths*** for fixed rate and multi-rate channels as recited in Applicants' amended claim 1.

As further recited in Applicants' amended claim 1, the high-rate signal-processing path and the low-rate signal-processing path comprise parallel signal-processing paths to concurrently despread the multi-rate and fixed-rate channels and generate, respectively, a first and second data outputs. Applicants' amended claim 8, for example, further recites that the high-rate signal-processing path further comprises a first rake and wherein the low-rate signal-processing path comprises second rate. The first and second rates generate, respectively, the first and second data outputs.

None of the cited art, teaches, suggests or motivates the generation of first and second data outputs separately from multi-rate and fixed-rate channels.

Nakayasu teaches a single channel processing path for receipt of one channel. This is illustrated by FIG. 2 of Nakayasu in which an input to a spread-spectrum receiver provided to a plurality of searchers 211 and finger sections 211 to search for and despread received signals with different time-delays. The despread signals are combined by rake section 23 (see Nakayasu FIG. 2 and column 3, line 53 through column 4, line 8). Only one rake section 23 is illustrated because only one channel is despread. Nakayasu further states that each finger section is associated with a different time delay and that a single diffusion code is used for all finger sections 212. (see Nakayasu column 3 line 53 through column 4, line 8). Thus, with Nakayasu receiver, more than one channel would impossible to despread. Nakayasu further states that finger sections 212 operate at a fixed rate (see Nakayasu column 4 lines 9 - 17).

Applicants' amended claim 9, for example, recites that the high-rate signal-processing path further comprises a high-rate rake to read symbols from at least one high-rate rake finger and to multiply the symbols by a channel estimation, and that the low-rate signal-processing path

comprises a low-rate rake to read symbols from a low-rate rake finger and to multiply the symbols by a channel estimation. Applicants find no teaching, suggestion or motivation in any of the cited art of two rakes to generate, respectively, separate data outputs from the multi-rate and fixed-rate channels.

Applicants' amended claim 15, for example, further recites that the receiver includes an interpolator to receive baseband samples from an analog front end and raise a sampling rate of the baseband samples to provide the baseband samples with an increased sampling rate in parallel to both the high-rate signal-processing path and the low-rate signal-processing path for use by rake fingers.

In view of the above, Applicants submit that claim 1 is not anticipated by Nakayasu. Applicants further submit that combining Nakayasu with any of the other cited references does not result in Applicant's amended claims 1 – 15. In view of this, Applicants submit that claims 1 – 15 are allowable over the cited. For similar reasons, Applicants submit that claims 16 - 26 are also allowable over the cited

Applicants' amended claim 2, for example, recites a wideband code division multiple access (WCDMA) receiver and a high-rate signal-processing path that despreads spread-spectrum multi-rate physical channels having a variable spreading factor and a low-rate signal-processing path that despreads fixed-rate spread-spectrum physical channels having a fixed spreading factor.

Applicants' amended claim 3, for example, recites that the high-rate path comprises at least one high-rate rake finger to despread spread-spectrum signals comprising the multi-rate channels. Each multi-rate channel has a different spreading code allowing for-substantially simultaneous despreading of more than one of several multi-rate channels.

Nakayasu further does not teach, suggest or motivate the generation of different despreading codes for despreading the different multi-rate channels. Applicants' claim 5, for example, recites at least one high-rate rake finger includes a code generator to generate the associated spreading codes for despreading each of the several multi-rate channels. Applicant's claim 20, for example, recites generating corresponding spreading codes for simultaneously despreading each of the several multi-rate channels.

Narvinger has been cited by the examiner for disclosing a despreading code generator that generates different despreading codes. Applicants find on teaching, suggestion or motivation in Narvinger of generating corresponding despreading codes for each of several multi-rate channels. Narvinger shows a despreading code generator 413 in FIG. 9, however does not suggest that different despreading codes are generated. Like Nakayasu, Narvinger also discloses a ***single path*** spread-spectrum receiver as illustrated by the ***single set of rakes*** in FIG. 6 of Narvinger and the single input in FIG. 9 of Narvinger (see also column 12, lines 8 – 32).

Matti Latva-aho has been cited by the Examiner for disclosing WCDMA and spreading factors ranging from 4 to 256. Matti Latva-aho does not teach, suggest or motivate a spread spectrum receiver having parallel signal-processing paths, as recited in Applicants' amended claim 1. The Matti Latva-aho article discusses the performance trade-offs of signals with different spreading factors. Therefore, combining Matti Latva-aho, with any of the other cited references, does not result in Applicants' claimed invention.

Applicants' amended claims 4 and 25, for example, further distinguish over the cited by reciting a set of correlators in which each correlator despreads one multi-rate channel of the several received multi-rate channels with an associated spreading code. As discussed above, none of the cited art teaches, suggests, or motivates the despreading of several received multi-rate channels with an associated spreading code with different correlators. Nakayasu, Narvinger and Matti Latva-aho each apply one despreading code to a set of parallel fingers for despreading a single rate channel.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney, Greg Gorrie at (480) 659-3314, or Applicants' below-named representative to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ALEX MARGULIS ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
Attorneys for Intel Corporation
P.O. Box 2938
Minneapolis, Minnesota 55402
(612) 349-9592

Date June 3, 2005

By Ann M. McCrackin
Ann M. McCrackin
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 3 day of June 2005.

John D. Gustav-Wrathall
Name

Signature